The Medical Corps of the United States Navy

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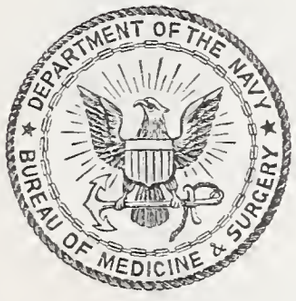

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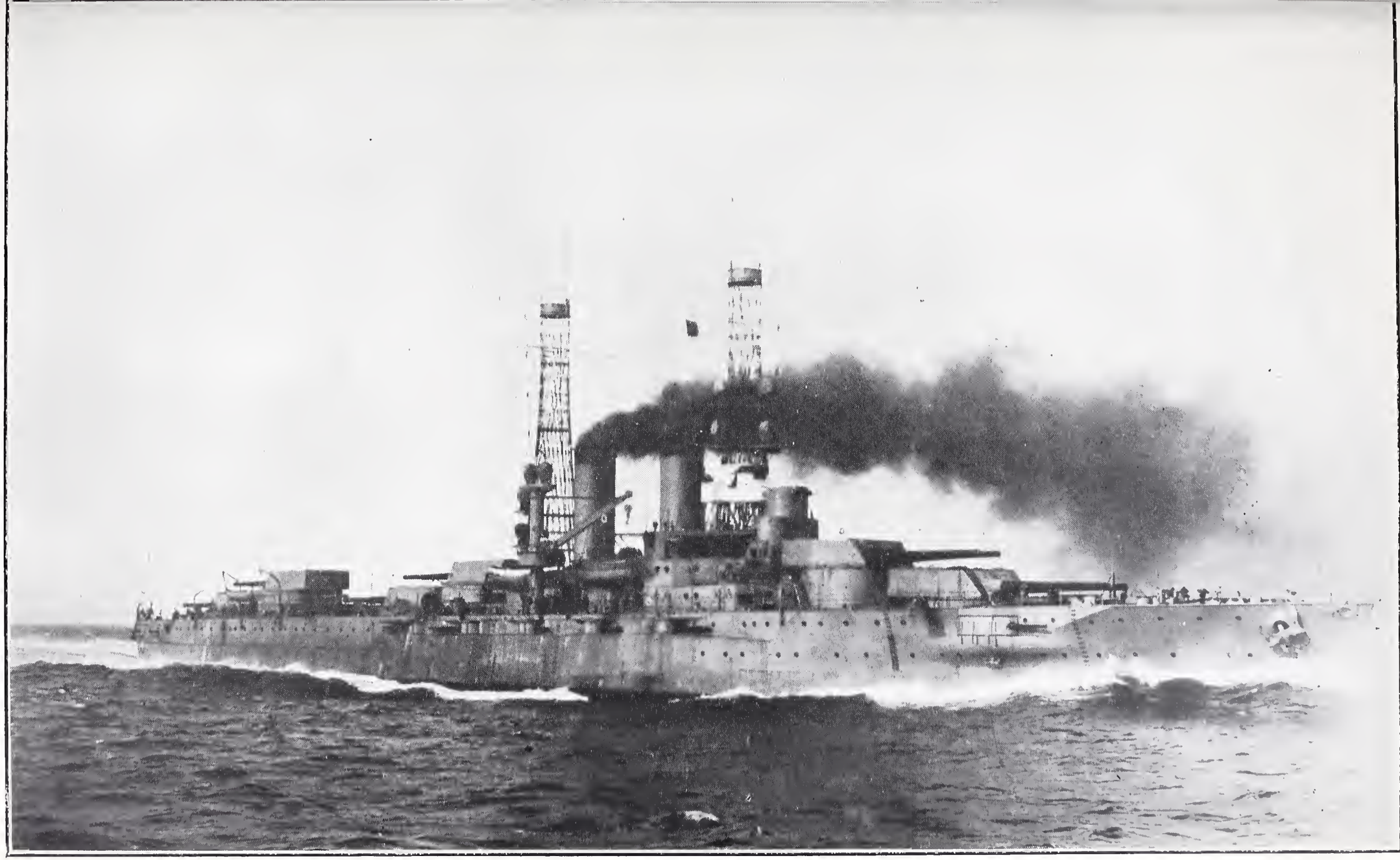
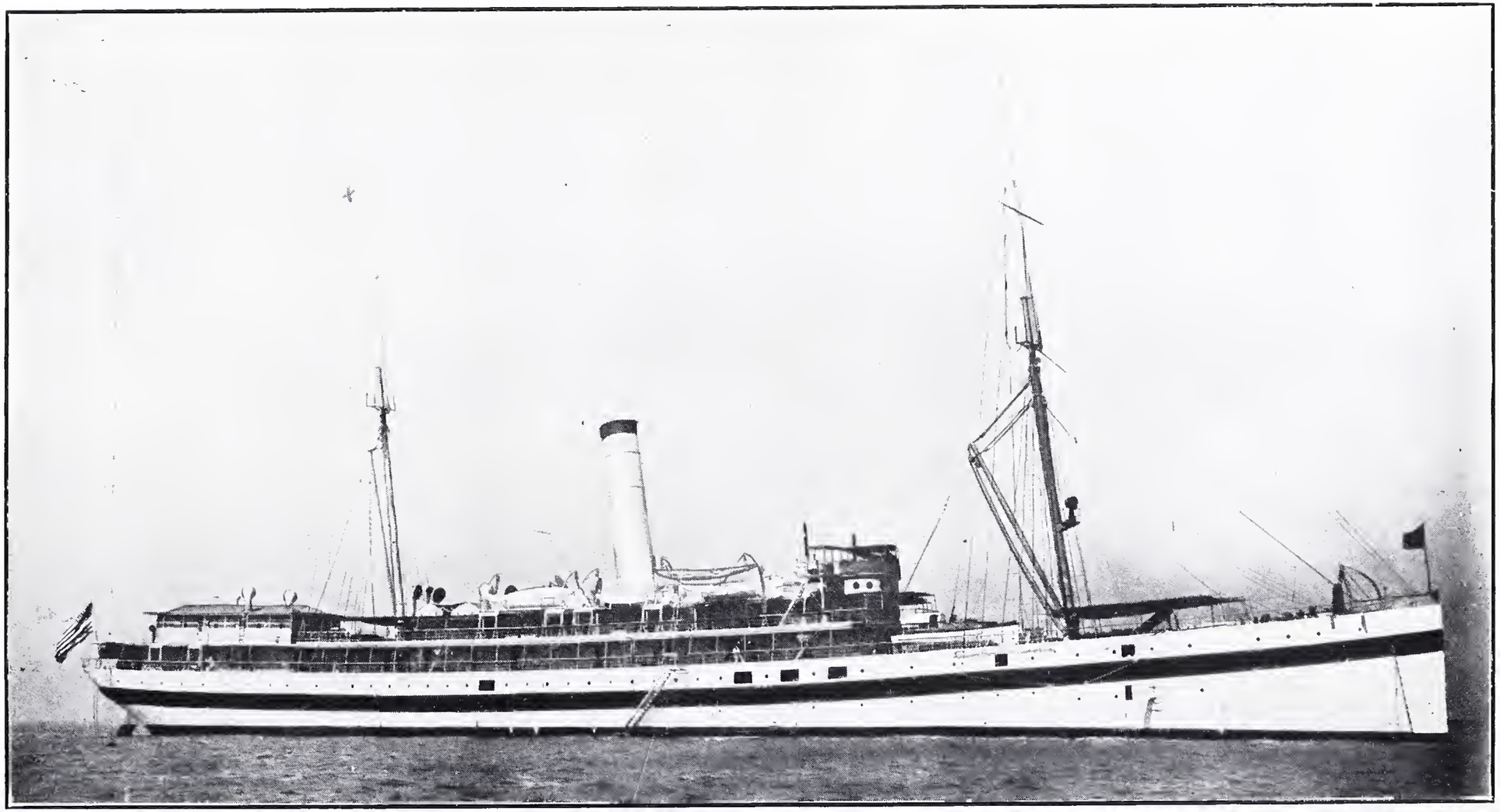


A MODERN BATTLESHIP.



U. S. NAVAL HOSPITAL SHIP SOLACE.

THE MEDICAL CORPS OF THE UNITED STATES NAVY.

This descriptive circular, relative to the Medical Corps of the United States Navy, is presented in the belief that a knowledge of the opportunities afforded by this service would be of practical assistance in the solution of that perplexing problem which comes to every medical man on the threshold of his career—the question as to what the next step is to be, what the world offers for the exercise of professional attainments, and where energy and ability bring recognition and returns.

The expansion of the Navy and its prominence in world movements during recent years have been accompanied by enlarged responsibilities and corresponding professional opportunities for its personnel. The Medical Corps has kept steadily abreast of these advances, as is inevitable when it is considered that members of this corps share, with all other officers of the Navy, one common ideal, the promotion of military efficiency, and to this end the medical officer has at his disposition all the devices and procedures embraced within the broad field of modern medical and surgical science. In the maintenance of these high aims it is of course desirable that the best type of young medical men will continue to be attracted to this branch of the Navy. It is a scientific service and there is every reason why its position as such should continue to improve. Individual merit is thoroughly appreciated and recognized. Every encouragement is given an officer to develop himself along special lines in which he may have particular interest and aptitude, in so far as such proficiency benefits him for his paramount duty of endeavoring to maintain the health of the personnel in the highest state of effectiveness.

The naval service, by reason of its world-wide intercourse, requires in its personnel the instincts, discernment, and conduct of a gentleman. As officers of the Navy come into contact with the most cultivated and interesting people of every country, it is essential that personal qualifications should enter into the determination of general suitability for the service. The wide range in the character of their work and responsibilities calls for high professional standards and ready adaptability.

The status of the medical officer in his relation to the rest of the service is established on a high plane; he is a commissioned officer and is vested with proper authority; he receives due recognition, as in civil life, wherever and whenever merited, and fills a position socially, professionally, and officially which self-respect approves. He is a wardroom officer as soon as he enters the service, and his personal accommodations are the same as those of his brother officers.

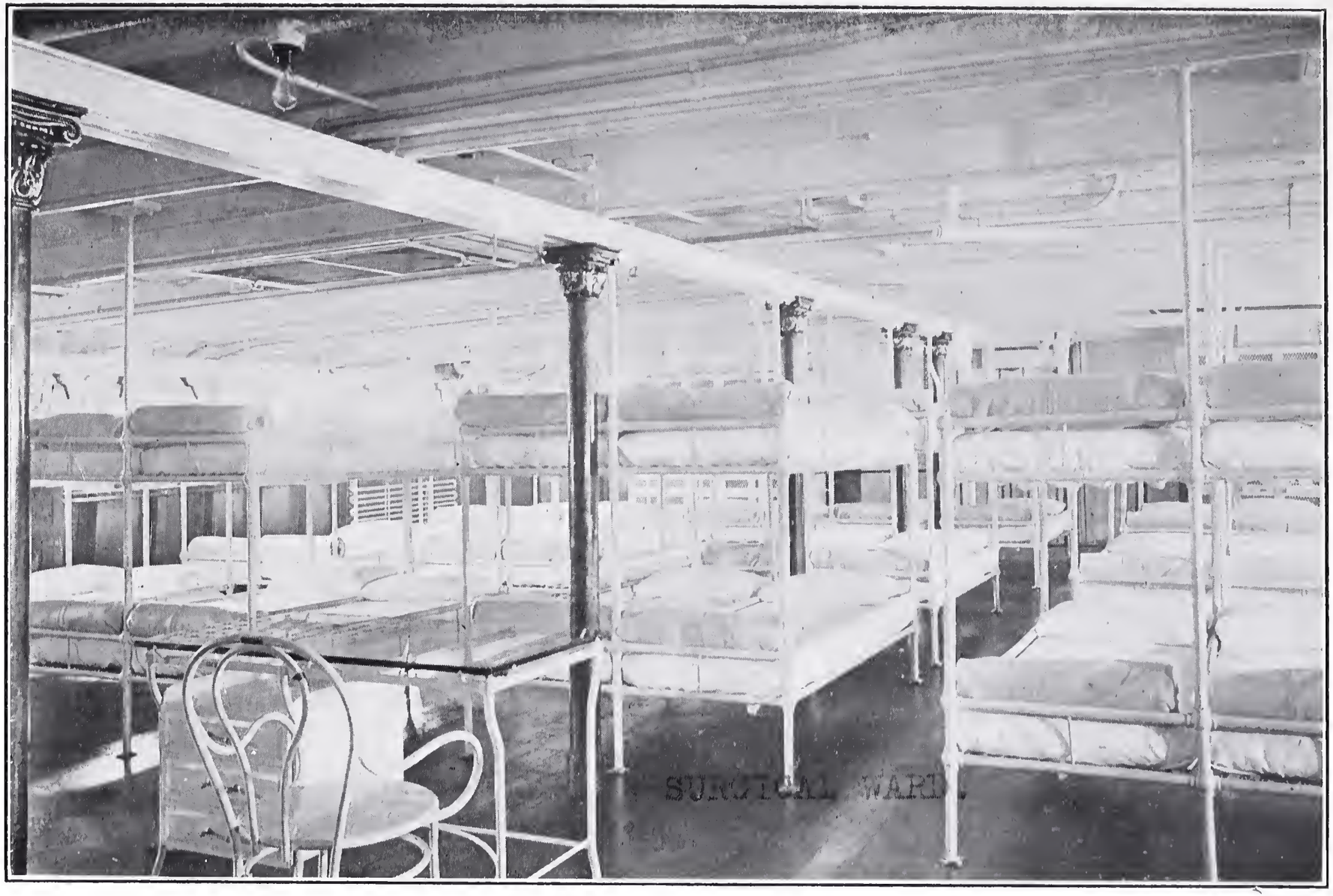
The professional opportunities of a medical officer of the Navy are liberal and broad and of a character gratifying to ambition. There is ample pathological material, facilities for diagnosis and treatment are always in accordance with the most recent advances in medicine

and surgery, while a complete equipment of instruments and apparatus for work of a routine or special nature is freely provided. For scientific investigation and research, particularly along the lines of hygiene, sanitation, and tropical medicine, he has peculiar advantages which he is given every encouragement to pursue. There are a number of hospitals in the Naval Establishment along the Atlantic and Pacific coasts of the United States, and also on foreign stations—such as the Philippine Islands, Guam, and Yokohama, Japan—and these institutions are strictly modern in their construction and appointments. On our modern ships generous space, specifically provided for in the plans, is assigned for the care of the sick and injured, and the arrangement, construction, and equipment of these sick quarters conforms to the most advanced medical and surgical standards. The illustrations give representative examples of the operating room and sick bay on board a modern battleship. The hospital ship, under the command of a medical officer, is a floating hospital and offers every provision for thorough and efficient medical, surgical, and laboratory work. Professional reference books and periodicals are issued for all ships and stations, and in this connection it is to be noted that, by virtue of his commission, a medical officer acquires the advantage of membership in the American Medical Association without the necessity of making application or paying dues.

Upon entering the service, a medical officer is usually assigned to one of the naval hospitals until the 1st of October succeeding his appointment, when he is detailed in attendance at the Naval Medical School, Washington, D. C. The course extends over a period of six months and looks to the preparation of the young surgeon for his subsequent duty. It is essentially practical, and includes tropical medicine, bacteriology, and laboratory work, naval surgery, drills, and the special duties of medical officers. Aside from the professional studies, the newly commissioned medical officer is instructed in discipline and the customs of the service ashore and afloat, matters of uniform, the use of side arms—in short, the Navy atmosphere and environments at the school fit the medical officer for the military as well as the medical character of his career, so that he will feel no embarrassment in his new surroundings on shipboard. It has been well said that "there are few graduates of our best medical schools who are afforded an opportunity equal to that of the newly commissioned assistant surgeons of the Navy for rounding out their education as physicians and surgeons." During all this time they receive the full pay of their rank, with allowances.

Upon graduation from the Naval Medical School the young medical officers are usually detailed to sea duty, and, after three years' service in the grade of assistant surgeon, are promoted to the grade of passed assistant surgeon upon passing the prescribed examination. Promotion to the grades of surgeon, medical inspector, and medical director is according to seniority, as vacancies in the higher grades occur. Promotions are made only after physical and professional examinations.

Medical officers in the grades of surgeon, medical inspector, and medical director are eligible for appointment as Surgeon General, with the rank, pay, and allowances of rear admiral. The term of office is four years, the appointee being selected by the President on his record and eminence in the service.



SURGICAL WARD, U. S. S. SOLACE.

SICK BAY OF A MODERN MAN-OF-WAR.

A commission in the Navy assures a life position (unless terminated by resignation) during good behavior, and pay continues whether on duty or sick, or on such leave as may be granted when an officer's services can be spared. All officers are retired for age at 62, and may be retired for physical disability, or, in the discretion of the President, after 30 years' service, in either case receiving three-quarters of the highest pay of the grade at the time of retirement. Upon death from wounds or disease contracted in line of duty, there will be paid to the widow of such officer, or, if no widow or children, to any person previously designated by him, an amount equal to six months' pay at the rate received at the time of death; also the widow or dependent relative can claim relief under the general pension laws of the United States.

The expenses and cost of living of a naval officer, like those of his confrère in civil life, are about what his tastes and inclinations dictate. When ashore he is provided with quarters, or an allowance in lieu thereof, and may live with his family, or, if unmarried, with a bachelor officers' mess, in which the cost of living is always nominal. On board ship servants are provided. The cost of food averages $30 a month. He has a stateroom to himself and messes with all the higher ranking officers except the captain. The only mandatory expense is that of uniform, and here, again, within reasonable limits, an officer may be as extravagant or conservative as he desires.

When a medical officer enters the medical service he is given credit for five years' constructive service in recognition of the time and money expended in the acquirement of his professional education, and for this and every subsequent five years' actual service he is given 10 per cent additional pay, computed on the pay of his rank, whatever that may be, up to 40 per cent. When serving on foreign stations or at sea officers receive an increase of 10 per cent in their pay.

Pay and allowance table.

Rank and length of service.	Pay per annum on shore.	Allowances per annum for quarters.[1]	Total pay per annum on shore.	Pay per annum at sea.
Assistant surgeons, rank of lieutenant (junior grade)	$2,200	$432	$2,632	$2,420
Passed assistant surgeons, rank of lieutenant	2,640	576	3,216	2,904
After 5 years in the service	2,880	576	3,456	3,168
After 10 years in the service	3,120	576	3,696	3,432
Surgeons, rank of lieutenant commander	3,600	720	4,320	3,960
After 10 years in the service	3,900	720	4,620	4,200
After 15 years in the service	4,000	720	4,720	4,400
Medical inspectors, rank of commander—				
After 15 years in the service	4,500	864	5,364	4,950
Medical directors, rank of captain—				
After 15 years in the service	5,000	1,008	6,008	5,500
Surgeon General, rank of rear admiral	6,000	1,152	7,152	6,600

[1] Both within and (on shore duty) beyond the continental limits of the United States, but only when quarters are not furnished by the Government.

NOTE.—There are also liberal allowances for fuel and light when on shore at home and beyond the continental limits of the United States, the amount varying according to rank, season, and the latitude of the station at which the officer is serving.

When traveling under orders in the United States, an officer is entitled to 8 cents per mile, and, when beyond the continental limits, liberal actual expenses, including tips, transportation of baggage, etc., consistent with the position of the officer, are allowed.

The foregoing describes briefly the possibilities which the Navy offers as regards social position, professional opportunities, and remuneration. There is no intention to give the false impression that the naval life of a medical man is one of ease and without heavy responsibilities. No walk of life worth following by the type of men desired by the Navy offers that. There is some unpleasant duty, such as on isolated foreign stations; more or less separation from one's family; the somewhat unsettled life entailed by alternating sea and shore duty; and the hardships and hazards demanded by the full performance of duty in peace or war are the factors which make a military career noble and honorable.

Examination for admission to the Medical Corps of the Navy is open to any graduate of a reputable medical school who is between 21 and 30 years of age and can present suitable testimony as to his character and United States citizenship, and who has had one year's service, after graduation, in a general hospital. The examinations are held at Mare Island, Cal., and at Washington, D. C., and usually extend over a period of about nine days.

Requests for further information should be addressed to the Surgeon General, United States Navy, Navy Department, Washington, D. C.

QUESTIONS FROM FIVE RECENT ENTRANCE EXAMINATIONS.

ANATOMY.

1. Describe the popliteal space and contents.
2. Describe the fifth cranial nerve.
3. Describe the kidney.
4. Describe the large intestines, including nerve and blood supply.
5. Pneumogastric nerve.
6. Palmar arches; their branches and distribution.
7. Give the number of bones in the skeleton of the adult male and describe the vertebræ in detail.
8. Name the muscles of the forearm and give their origins and insertions.
9. Describe triangles of the neck and enumerate contents of each.
10. Describe the knee joint.

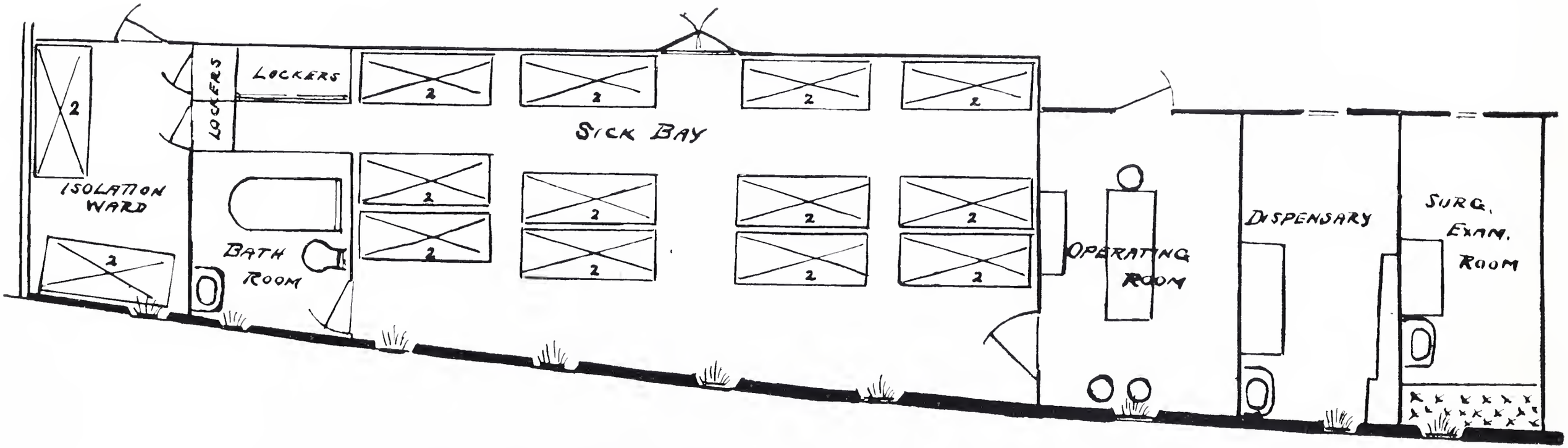
PHYSIOLOGY.

1. Digestion of fats, proteids, and carbohydrates.
2. (*a*) The events occurring in a single cardiac cycle.
   (*b*) The function of the adrenals.
3. Give the physiological functions of the liver.
4. (*a*) Describe mechanism of micturition.
   (*b*) Give mechanism of organ of hearing.
   (*c*) What are the functions of the pneumogastric nerve?
5. (*a*) Name and describe the causes producing the respective heart sounds.
   (*b*) What are the factors concerned in the venous circulation?
   (*c*) Briefly describe visual accommodation and mention the function of each involved factor.
   (*d*) Define reflex nervous impulses and give examples.

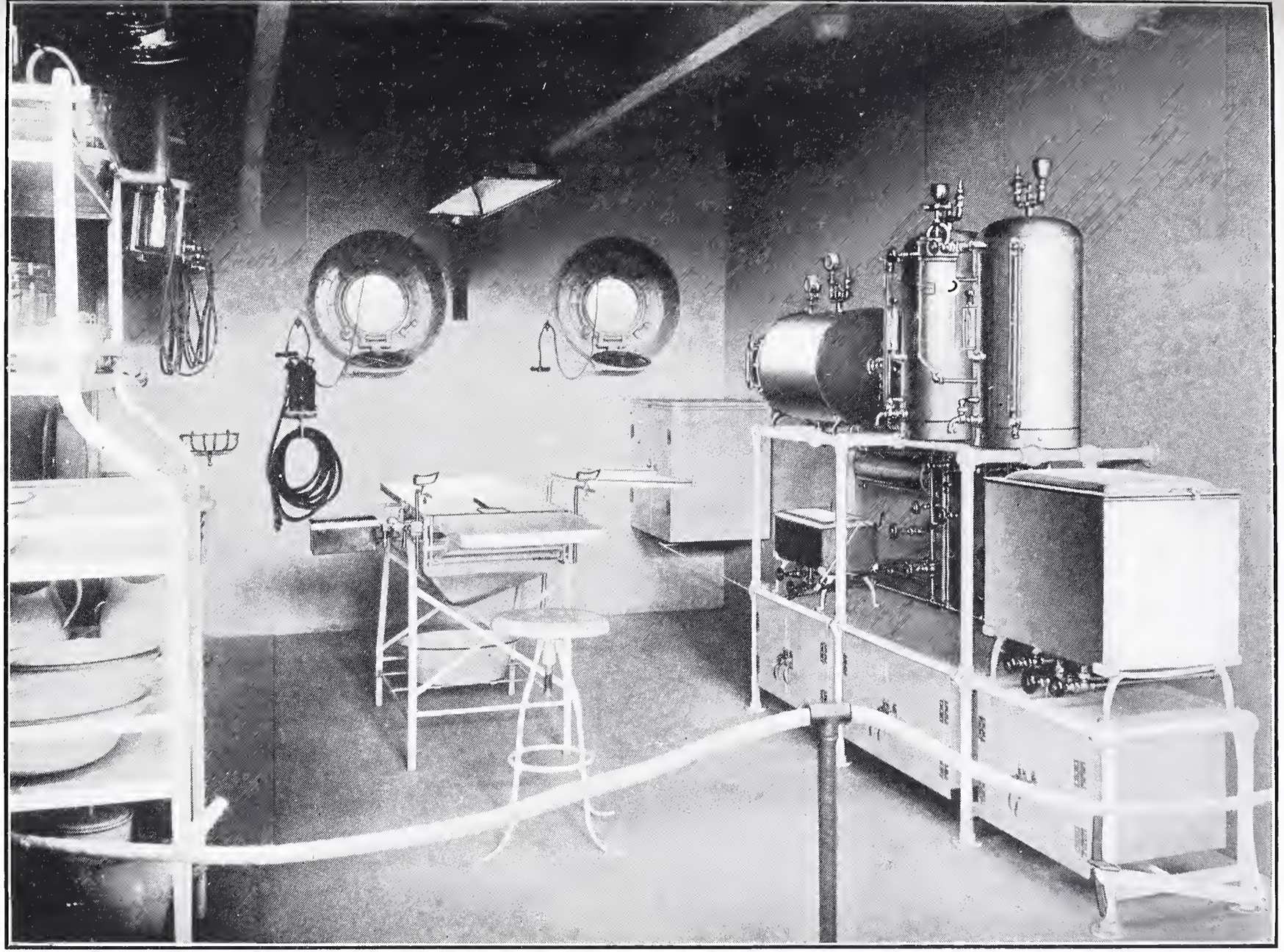
SURGERY.

1. Dislocations of the hip joint: Etiology, classification, and treatment.
2. (*a*) Cholecystectomy: Give indications and describe operation in detail.
   (*b*) Suprapubic cystotomy: Give indications and describe operation in detail.
3. Name the different types of operation for inguinal hernia and describe in detail the one you prefer.
4. (*a*) Discuss cancer of the tongue.
   (*b*) Hypertrophy of the prostate gland: Etiology, symptoms, and treatment.
5. Cholecystitis: Etiology, diagnosis, symptomatology, and treatment.
6. Coxalgia: Etiology, diagnosis, symptomatology, and treatment.

OFFICERS' QUARTERS—WARDROOM ON A BATTLESHIP.



PLAN SHOWING ARRANGEMENT OF SICK QUARTERS ON A MODERN BATTLESHIP.



OPERATING ROOM ON A MODERN BATTLESHIP.

TYPE OF MEDICAL OFFICERS' QUARTERS.

7. Describe Grave's disease and the operative measures used for its relief.
8. Give etiology, diagnosis, and treatment of intestinal obstruction.
9. (*a*) Discuss appendicitis from a surgical point of view.
   (*b*) Describe operation in detail in a case in which a localized abscess has just ruptured into the peritoneal cavity.
10. Outline conditions in which a suprapubic cystotomy is indicated. Describe operation.

MEDICINE.

1. Chronic interstitial nephritis (not omitting differential diagnosis).
2. Lobar pneumonia.
3. Give differential diagnosis between exanthemata.
4. (*a*) Etiology of dysentery.
   (*b*) Cerebrospinal fever.
5. Medical aspects of abscess of the liver.
6. Aneurysm of the aorta.
7. Discuss yellow fever.
8. Give etiology symptoms, diagnosis, and treatment of acute parenchymatous nephritis.
9. (*a*) Diphtheria.
   (*b*) Discuss diagnostic significance of dropsy.
10. (*a*) Describe skin appearances in: Rubella, rubeola, scarlatina, varicella, varioloid, and give the day on which the eruption appears.
    (*b*) Differential diagnosis between hepatic and renal colic and give treatment.
    (*c*) Describe Brand method of typhoid treatment.

PATHOLOGY.

1. (*a*) Name three types of acute miliary tuberculosis and give pathological anatomy of each.
   (*b*) Pathology of malignant endocarditis.
2. (*a*) Discuss phenomena of inflammation.
   (*b*) Give brief description of two important granulomata.
   (*c*) Give morbid anatomy of malaria.
3. Describe histological changes in the liver in—
   (*a*) Leukemia (myelogenous); (*b*) pernicious anemia; (*c*) atrophic cirrhosis.
4. Give pathology of typhoid fever.
5. (*a*) What is caseation and how is this process brought about in tuberculous lesions?
   (*b*) What is coagulation necrosis, and give a typical instance of the process.

OBSTETRICS.

1. The care of pregnancy and of the newly born child and the management of a normal labor.
2. Puerperal eclampsia.
3. Placenta prævia.
4. Give diagnosis and treatment of threatened abortion.
5. (*a*) Discuss positive and doubtful signs of pregnancy in the order of their value.
   (*b*) Treatment of the vomiting of pregnancy.

MEDICAL JURISPRUDENCE.

1. Medico-legal examination of blood stains.
2. In considering the question of infanticide discuss—
   (*a*) Was the infant born alive?
   (*b*) Has the woman under examination been recently delivered?
3. Carbon dioxide: Source, action, lethal dose, symptoms, treatment, and post-mortem appearances. Was death suicidal or accidental?
4. How would you tell whether a wound were inflicted ante mortem or post-mortem?
5. (*a*) Symptoms, fatal dose, fatal period and treatment of phosphorous poisoning.
   (*b*) In what respects does an expert differ from an ordinary witness?

MATERIA MEDICA AND PHYSIOLOGICAL ACTION OF DRUGS.

1. (*a*) Anthelmintics: Pharmacopœial designations, dosage, applicability and administration.
   (*b*) Phenol: Physiological action and toxicology.
2. (*a*) Morphine: Physiological action.
   (*b*) Iodine and principal iodides: Pharmacopœial designations, doses, administration and therapeutics.

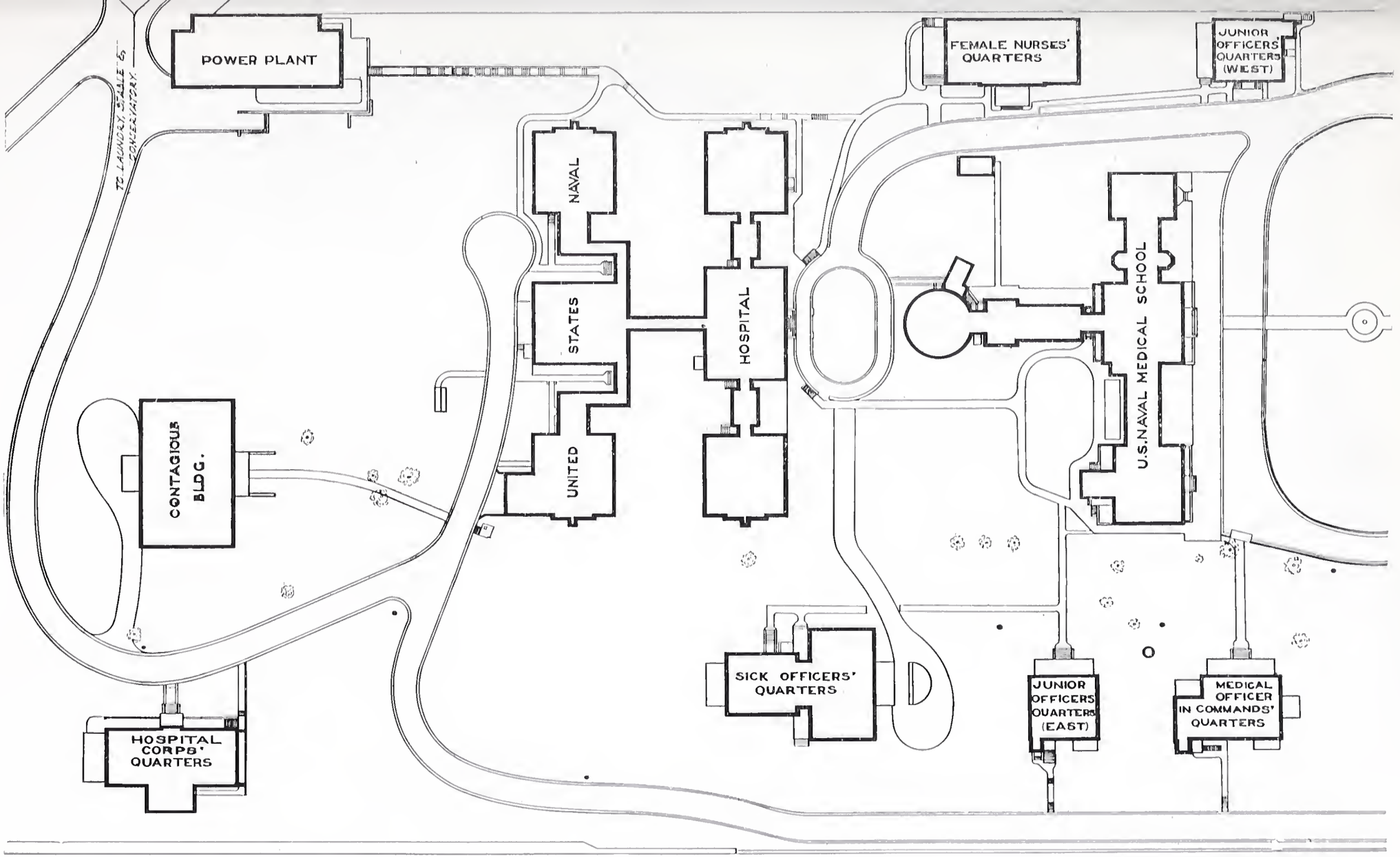
3. Give therapeutics, full pharmacopœial designations, dosage, and methods of administration of the following: Amyl nitrite; sweet spirits of niter; spirit of nitroglycerine; urotropin; Blaud's pills; chloral; potassium acetate; cream of tartar.
4. Physiological action and materia medica of: Caffeine and aconite, using pharmacopœial designations of all preparations.
5. (*a*) Strychnia: Physiological actions and toxicology.
   (*b*) Cinchona and salts of its alkaloids: Therapeutics and materia medica, using U. S. P. designations and giving doses.
6. (*a*) Morphine: Physiological actions and toxicology.
   (*b*) Hydrocarbon hypnotics: Therapeutics and materia medica, using U. S. P. designations and giving methods of administration and dosage.
7. (*a*) Iodine, medicinal compounds: Physiological and therapeutic action; medicinal doses.
   (*b*) Aconite: Botanical description; habitat; physiological and therapeutic action; medicinal compounds and uses.
8. (*a*) Opium and its official alkaloidal salts and preparations. Pharmacopœial designation and dose of each.
   (*b*) Give physiological action of digitalis.
9. (*a*) Therapeutics and exact method of using each preparation of silver.
   (*b*) Caffein, nitroglycerine, and chloral: Therapeutics and materia medica, together with methods of administering each.
10. (*a*) Origin, description, and dose of the following: Taraxacum; aloes, cascara sagrada; henbane; opium; and mustard.
    (*b*) Pharmacopœial designation, dose, and method of administration or manner of using, and therapeutics of each of the following: Borax, brandy, hartshorn, cayenne pepper, preparations containing camphor, ethyl chloride, sweet spirits of niter, and Hoffman's anodyne.

CHEMISTRY.

1. (*a*) Define and illustrate acid, base, and salt.
   (*b*) Define valence and show by graphic formula the valence of carbon in glycerine.
   (*c*) Write equation showing what happens when lime is slaked.
   (*d*) Define molecular weight and show how you would calculate the amount of CO_2 that combines with 1 gram of lime. Ca=40; O=16; C=12.
   (*e*) Arsenic: Occurrence in nature; principal compounds and method of detection.
2. (*a*) State, of each of the following-named elements, the valence, physical state, principal oxide or oxides, and one method of preparation. Cl, H, S, Zn.
   (*b*) How much Na_2SO_4 can be obtained from 50 grams of NaCl, by treating with H_2SO_4. Give reaction and show work in full. Na=23; Cl=35; H=1; S=32; O=16.
3. (*a*) How much chlorine in 100 grams of NaCl. Na=23; Cl=35.
   (*b*) Give oxygen compounds of sulphur and the corresponding acids and consider the chemistry of sulphur in disinfection by fumigation.
   (*c*) Define alcohol, organic acid, and aldehyde and illustrate by graphic formulæ.
4. (*a*) Give the chemical symbols of ammonium chloride, potassium permanganate, sulphuric ether, ethyl chloride, and phenol.
   (*b*) What do you understand by a volumetric solution? How would you prepare and standardize a N/10 solution of NaOH?
5. (*a*) What is the principle of soap manufacture?
   (*b*) Complete reaction: $C_3H_5(C_{18}H_{35}O_3)+3NaOH=?$
   (*c*) What is understood by term: Fatty acid series?
   (*d*) What is nitroglycerine and what is dynamite?

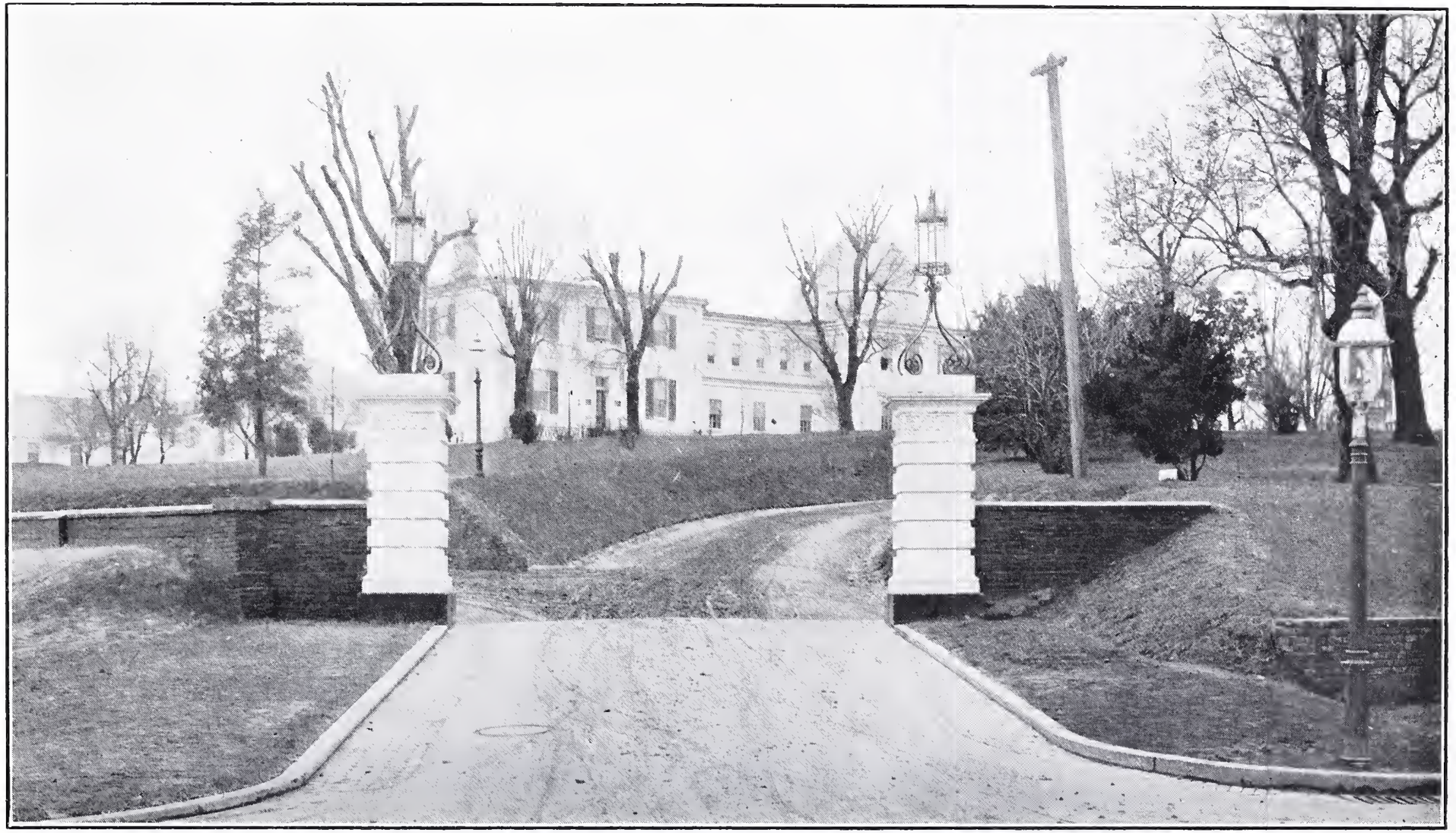
MICROSCOPY.

1. (*a*) Give causative agents if known and means of transmission of the following: Malta fever; kala azar; sleeping sickness; yellow fever; bubonic plague; Asiatic cholera; tropical abscess of the liver.
   (*b*) Discuss laboratory diagnosis of diphtheria and tell how you would isolate the organism and determine its virulence.
2. (*a*) Give technique of Gram's stain. How do the following organisms react to it: Bacillus typhosis; bacillus coli communis; bacillus diphtheriæ; staphylococcus pyogenese aureus.
   (*b*) Give brief history of the life cycle of plasmodium vivax.



UNITED STATES NAVAL HOSPITAL AND MEDICAL SCHOOL RESERVATION, WASHINGTON, D. C.

The main hospital building faces north.



UNITED STATES NAVAL MEDICAL SCHOOL, WASHINGTON, D. C.

3. (*a*) What are the chief cultural characteristics of *B. typhosus* and *B. coli*.
   (*b*) What procedure would you employ to isolate *B. typhosus* from fæces.
4. Morphology, cultural and staining characteristics of *B. diphtheriæ*.
5. Laboratory diagnosis of: (*a*) syphilis; (*b*) pernicious anemia.

HYGIENE.

1. (*a*) Discuss changes in the air due to occupation, and tell how the standard for ventilation has been determined.
   (*b*) Define soil pipe, waste pipe, house drain, rain leaders, and traps, and discuss the construction, arrangement, and connections of a house drain.
   (*c*) Describe an anemometer and tell in detail how you would use it.
2. (*a*) Comparison of types of water closets and statement of their installation from a sanitary point of view.
   (*b*) Municipal purification of a city's water supply.
3. (*a*) Tell how deep-well water is purified.
   (*b*) How is the circulation of water secured in heating a dwelling with hot water.
   (*c*) Discuss water seal and "back venting" in house plumbing.
4. Having a case of bubonic plague, state in detail what measures you would take to prevent the spread of this disease.
5. (*a*) Name the nutriments in a ration and give the functions of each.
   (*b*) Discuss traps and vents in house plumbing.
   (*c*) Methods by which water is purified for municipal use.

QUARANTINE.

1. (*a*) By the quarantine regulations of the United States, under what conditions is an arriving vessel placed in quarantine?
   (*b*) Mention the disinfectants that those regulations authorize, and give the methods for using gaseous disinfectants.
2. Given formalin, sulphur, corrosive sublimate, carbolic acid, and chlorinated lime, state the circumstances under which you would select each one rather than the others as a disinfectant, give reason, and tell how and in what strength you would use each.
3. (*a*) Tell exactly how to disinfect a room and contents with formalin gas.
   (*b*) What is the incubation period for each of the quarantinable diseases, how long should a case be kept in isolation, and just how you would relieve such a case from isolation.
4. Give incubation period of following: Yellow fever, measles, scarlet fever, Asiatic cholera, and plague.
5. (*a*) Discuss, in detail, use of sulphur dioxide and formaldehyde in quarantine work and tell exactly how each is obtained and utilized in disinfecting a room.
   (*b*) Cholera: Incubation period and disinfection of dejecta of persons in quarantine on that account.

PRACTICAL WORK IN OPERATIVE SURGERY.

1. (*a*) Ligation, posterior tibial artery.
   (*b*) Ligation, anterior tibial artery.
   (*c*) Amputation, wrist joint.
   (*d*) Herniotomy (Bassini).
2. (*a*) Ligation, radial artery.
   (*b*) Amputation, elbow joint.
   (*c*) Amputation, upper third of leg.
   (*d*) Frontal sinus.
3. (*a*) Ligation, brachial artery.
   (*b*) Amputation, hand (carpo-metacarpal joint).
   (*c*) Opening and drainage of frontal sinus.
4. (*a*) Ligation, brachial artery.
   (*b*) Amputation, thumb.
   (*c*) Exposure of fissure of Rolando.
5. (*a*) Ligation, femoral artery (in Hunter's canal).
   (*b*) Tracheotomy.
   (*c*) Excision of rib.

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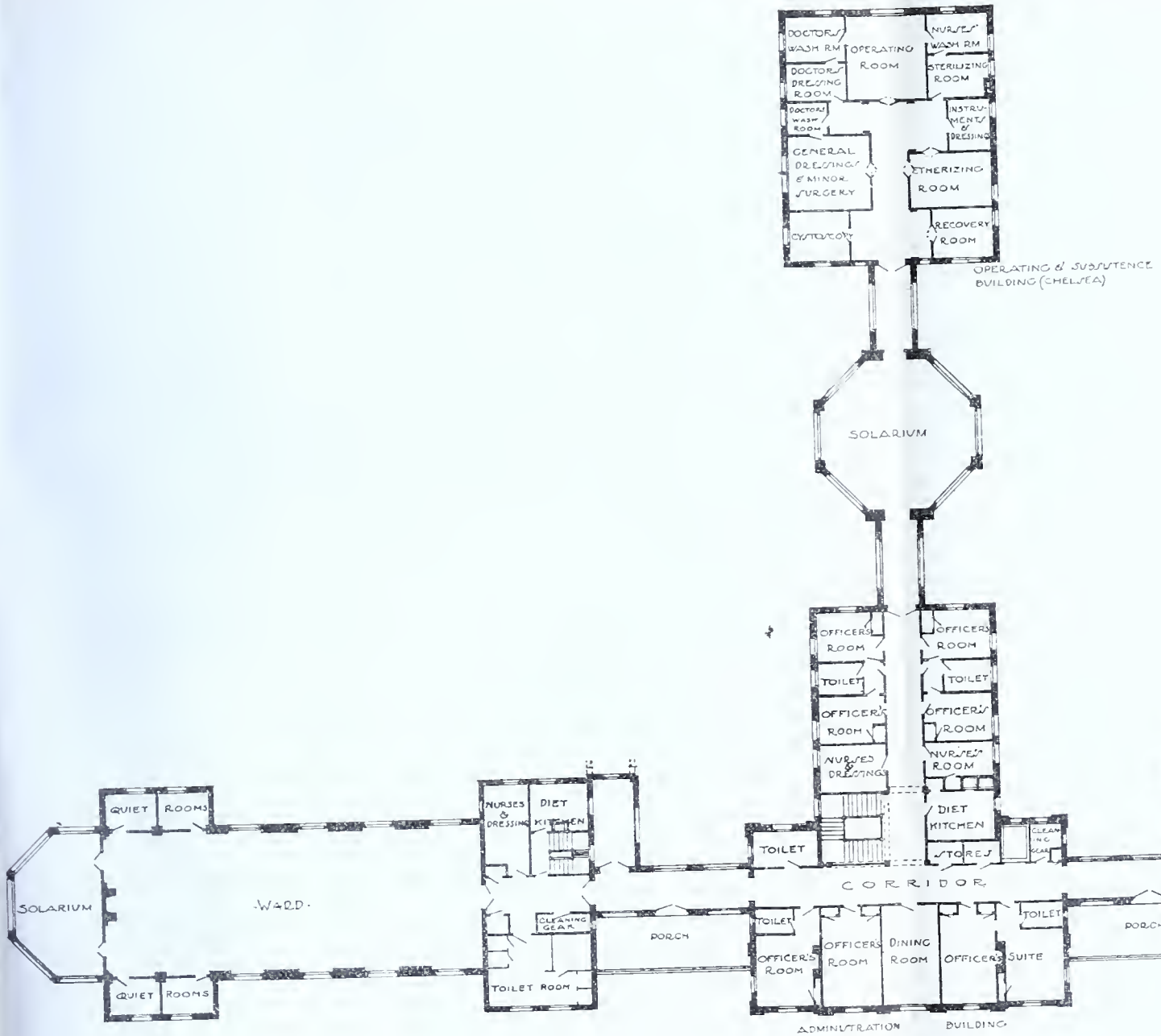
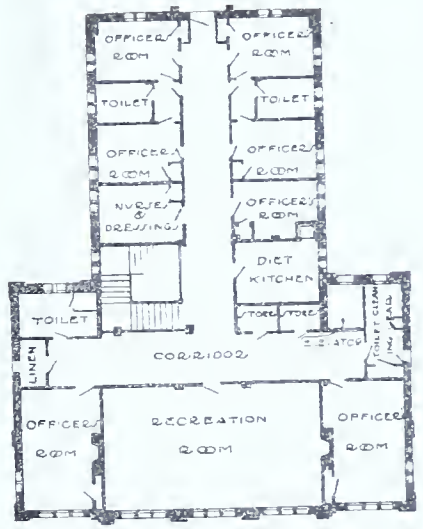
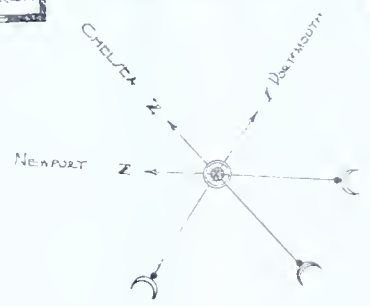


WARDS
30-4" - 78-2"
·26 BEDS NORMAL CAPACITY
92 SQ FT PER BED
1250 CU FT.



THIRD FLOOR PLAN
ADMINISTRATION BLDG



SECOND · FLOOR · PLAN ·
&
ADMINISTRATION BUILDING
THIRD FLOOR PLAN

NEW UNITED STATES NAVAL HOSPITALS AT PORTSMOUTH, N. H., CHELSEA, MASS., AND NEWPORT R. I.

71176—13. (To follow page 9.)